

ABSTRACT OF THE DISCLOSURE

A compound semiconductor device has: a substrate; a GaN channel layer; an n-type $\text{Al}_q\text{Ga}_{1-q}\text{N}$ ($0 < q \leq 1$) electron supply layer; an n-type GaN cap layer; a gate electrode disposed on the cap layer and forming a Schottky contact; recesses formed on both sides of the gate electrode on source and drain sides by at least partially removing the cap layer, the recesses having a bottom surface of a roughness larger than a roughness of a surface of the cap layer under the gate electrode; a source electrode disposed on the bottom surface of the recess on the source side; and a drain electrode disposed on the bottom surface of the recess on the drain side.